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(71) Applicants and

(72) Inventors: **ANLAGE, Steven, Mark** [US/US]; 8810 Herons Flight, Laurel, MD 20723 (US). **STEINHAUER, David, Ethan** [US/US]; 1121 Westview Terrace, Laurel, MD 20707 (US). **VLAHACOS, Constantine, P.** [US/US]; 3014 East Baltimore Street, Baltimore, MD 21224 (US). **WELLSTOOD, Frederick, C.** [US/US]; 6123 Main Street, Lanham, MD 20706 (US).

(74) Agents: **SOKOHL, Robert, E. et al.**; Sterne, Kessler, Goldstein & Fox P.L.L.C., Suite 600, 1100 New York Avenue, N.W., Washington, DC 20005-3934 (US).

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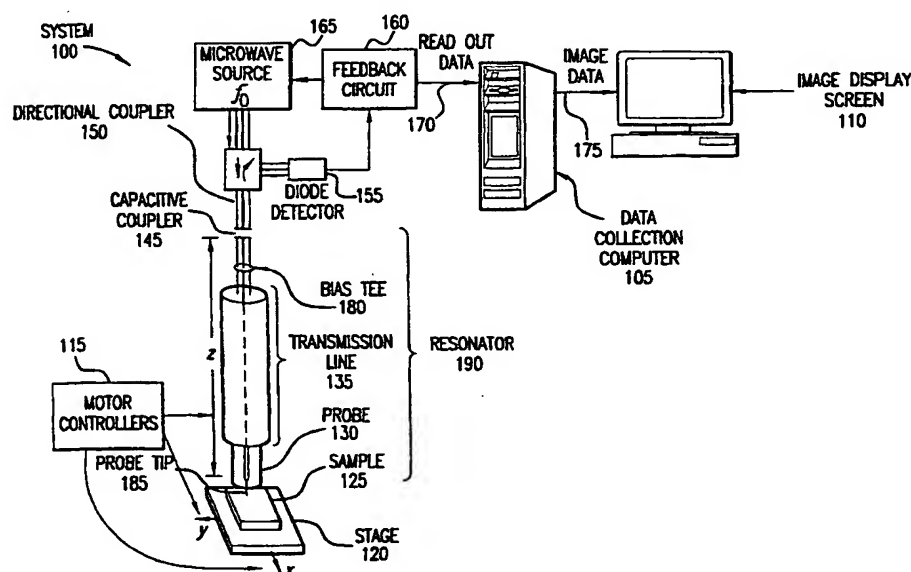
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(54) Title: **QUANTITATIVE IMAGING OF DIELECTIC PERMITTIVITY AND TUNABILITY**



(57) Abstract: A near-field scanning microwave microscope images the permittivity and dielectric tunability of bulk and thin film dielectric samples on a length scale of about 1 micron or less. The microscope is sensitive to the linear permittivity, as well as to nonlinear dielectric terms, which can be measured as a function of an applied electric field. A versatile finite element model is used for the system, which allows quantitative results to be obtained. The technique is non destructive and has broadband (0.1-50 GHz) capability.

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